

Time: 20 Minutes	(OBJECTIVE TYPE)	Marks: 17
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Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

- 1-1- The dipole moment of CO_2 is:
 - (a) 0.95 D
 - (b) 1.85 D
 - (c) 1.61 D
 - (d) 0 D ✓
- 2- Hydrogen bonding is maximum in:
 - (a) HI
 - (b) HBr
 - (c) HCl
 - (d) H_2O ✓
- 3- The pH of 10^{-3} mole dm^{-3} of an aqueous solution of H_2SO_4 is:
 - (a) 3.0
 - (b) 2.7 ✓
 - (c) 2.0
 - (d) 1.5
- 4- The volume occupied by 16 g of CH_4 at STP is:
 - (a) 2.24 dm^3 ✓
 - (b) 22.414 dm^3 ✓
 - (c) 1.3 dm^3
 - (d) 1.8 dm^3
- 5- In zero order reaction, the rate is independent of:
 - (a) Temperature of reaction
 - (b) Concentration of reactants ✓
 - (c) Concentration of products
 - (d) Nature of reactants
- 6- The velocity of photon is:
 - (a) Independent of its wavelength ✓
 - (b) Depend on its wavelength
 - (c) Depend on its source
 - (d) Depend upon its amplitude
- 7- The unit millibar is commonly used by:
 - (a) Meteorologists ✓
 - (b) Astronauts
 - (c) Engineers
 - (d) Dalton

8- The largest number of molecules are present in:

(a) 3.6 g of H_2O ✓ (b) 4.8 g of $\text{C}_2\text{H}_5\text{OH}$
(c) 2.8 g of CO (d) 5.4 g of N_2O_5

9- The type of hybridization in BeCl_2 is:

(a) sp^3 (b) sp^2
(c) sp ✓ (d) dsp^2

10- The molal boiling point constant is the ratio of the elevation in boiling point to:

(a) Molarity (b) Molality ✓
(c) Mole fraction of solute (d) Mole fraction of solvent

11- Splitting of spectral lines when atoms are subjected to strong electrical field is called:

(a) Zeeman effect (b) Stark effect ✓
(c) Photoelectric effect (d) Compton effect

12- The molar volume of CO_2 is maximum at:

(a) S.T.P (b) 127°C and 1 atm. ✓
(c) 0°C and 2 atm. (d) 273°C and 2 atm.

13- The oxidation state of Mn in KMnO_4 is:

(a) +7 ✓ (b) +6
(c) +2 (d) +5

14- The molecules of CO_2 in dry ice form the:

(a) Ionic crystals (b) Covalent crystals
(c) Molecular crystals ✓ (d) Metallic crystals

15- Which one of the following compound is purified by sublimation:

(a) Benzoic acid ✓ (b) SiO_2
(c) CS_2 (d) NaI

16- The term that is not state function:

(a) Enthalpy (b) Internal energy
(c) Work ✓ (d) Volume

17- Liquids which are practically immiscible:

(a) $\text{H}_2\text{O} + \text{C}_6\text{H}_6$ ✓ (b) $\text{H}_2\text{O} + \text{C}_2\text{H}_5 - \text{OH}$
(c) $\text{H}_2\text{O} + \text{HCl}$ (d) $\text{H}_2\text{O} + \text{CH}_3 - \text{O} - \text{CH}_3$